

Amendments to the Specification:

Please replace the paragraph beginning on page 6, lines 17-24, with the following rewritten paragraph:

The twelfth aspect of the invention is to provide a polymer gel composition (S), wherein the polymer gel is an IPN (interpenetrating polymer network) material including at least polymers which form hydrogen bonds with each other, and the IPN material comprises the crosslinked polymer having at least a hydrogen bonding group, and a crosslinked polymer having at least a carboxylic group or a partially neutralized crosslinked polymer of the crosslinked polymer having at least a carboxylic group.

Please replace the paragraph beginning on page 26, line 17 to page 27, line 10, with the following rewritten paragraph:

As water-soluble organic compounds, there are exemplified: an alcohol, a ~~keton~~ ketone, an ether, an ester, an amide, a polymer including a functional group described above in a repeating unit and the like. More specifically, alcohols such as methyl alcohol, ethyl alcohol, butyl alcohol, ethylene glycol, propylene glycol, ethylene glycol monoethyl ether and the like; ketones, such as acetone, methyl ethyl ketone and the like; ethers such as THF (tetrahydrofuran), 1,4-dioxane, diethyl ether, ethylene glycol diethyl ether and the like; esters such as ethyl acetate and the like; and dimethylformamide, dimethylacetamide, dimethylsulfoxide, acetonitrile, urea and the like can be cited. Furthermore, there are also preferably used: polyvinylpyrrolidone, polyethylene oxide and ~~copolymers~~ copolymers including such polymers. Among them, preferable are alcohol, ethylene glycol, propylene glycol, ethylene glycol monoethyl ether and the like; dimethylsulfoxide, dimethylformamide and the like, and especially preferable are alcohols.

Please replace the paragraph beginning on page 35, line 9 to page 36, line 4, with the following rewritten paragraph:

While the resin composition shown in Fig. 1, the optical film 9 shown in Fig. 2 and the optical device shown in Fig. 3 can perform light-modulation and display due to a change in natural energy such as atmospheric temperature and a solar ray amount, it is also possible to intentionally modulate light with them by providing stimulating means. In this case, the stimulating means practically provide a heat to a polymer gel, examples of which include various kinds of heat feeding means such as feeding light, feeding electromagnetic wave, and feeding magnetic field, in addition to a current heating resistor. Among them, especially preferable is current heating resistor. Specifically, a metal layer such as Ni-Cr alloy; a metal oxide layer such as tantalum boride, tantalum nitride, tantalum oxide, and ITO (indium tin oxide); and a heating resistor layer such as a carbon layer can be preferably used, and they are allowed to generate heat by providing wires in the layers and feeding current to the wires. Furthermore, in the case of feeding light, heat feeding means can be realized by using a layer that includes a light emitting device such as a laser, and LED (light emitting diode), and EL (electro-luminescent device) and the like. An in the case of feeding magnetic field or electromagnetic wave, heat feeding means can be realized by providing an electromagnetic coil or electrodes.

Please replace the paragraph beginning on page 37, line 18 to page 38, line 7, with the following rewritten paragraph:

Particles of a thermo-sensitive type (high temperature swelling type) polymer gel containing a colorant were produced according to a process described below. An aqueous solution was prepared by adding 0.575 g distilled water and 3.425 g of an aqueous dispersion containing a blue pigment as a colorant (micro-encapsulated blue pigment manufactured by

DAINIPPON INK & CHEMICALS INC.) at a concentration of 13.5% by weight to 0.8 g of acrylamide, 0.2 g of ~~N,N~~ N,N-dimethylacrylamide and 1.0 mg of methylenebisacrylamide as a cross linker, and the solution was stirred and mixed. A solution prepared by dissolving 3.9 g of a sorbitol type surfactant (manufactured) by Nikko Chemicals Co., Ltd. with a trade name of SO-15R) into 300 ml of cyclohexane was put into a reaction vessel which had been purged with nitrogen, the previously prepared aqueous solution was added into the vessel, and the mixture was stirred with a rotary agitating blade for 30 min at 1200 rpm to make a suspension.